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10/026,139

12/18/2001

Manoj Kumar

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02/24/2004

GENENCOR INTERNATIONAL, INC.
ATTENTION: LEGAL DEPARTMENT
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EXAMINER

RAO, MANJUNATH N

ART UNIT

PAPER NUMBER

1652

DATE MAILED: 02/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|--|-------------------------------------|--|
| Office Action Summary | Application No. 10/026,139 | Applicant(s) KUMAR, MANOJ | |
| | Examiner Manjunath N. Rao, Ph.D. | Art Unit 1652 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 October 2003.
 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 40-48 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) ☐ Claim(s) _____ is/are allowed.
 6) ☒ Claim(s) 40-48 is/are rejected.
 7) ☐ Claim(s) _____ is/are objected to.
 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
 10) ☒ The drawing(s) filed on 18 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
 * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>12-18-01</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claims 40-48 are currently pending in this application.

Drawings

Drawings submitted in this application are accepted by the Examiner for examination purposes only.

Claim Objections

Claim 40 is objected to because of the following informalities: Claim 40 recites an abbreviation "ASA" without providing its expansion. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 40 and claims 41-48 that depend therefrom are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 40 recites the phrase "obtaining yeast capable of growing on ascorbic acid...". The phrase leads one to believe that such yeasts are readily available, while actually in order to practice the above method one has to "select an yeast capable of growing on ascorbic acid" experimentally using any given set of yeast cultures. Therefore, examiner suggests applicants to amend the claim to recite "selecting an yeast capable of growing on ascorbic acid..."

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 40-47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Costamagna et al. (Can. J. Microbiol., 1986, Vol. 32:756-758 cited in IDS) and Hoshino et al. (EP 0366922, 9-5-90). Claims 40-47 in this instant application are drawn to a method of screening yeasts capable of producing ascorbic acid or its stereoisomer by selecting yeasts capable of growing on ascorbic acid, culturing said yeasts in the presence of KLG under conditions suitable for production of ascorbic acid and assaying said yeast culture for production of ascorbic acid or its stereoisomer.

Costamagna et al. teach the screening of yeasts capable of growing on ascorbic acid as sole carbon source. The reference reports the identification of seven strains including the genus of *Cryptococcus* and two species of *Candida* that could use only ascorbic acid for growth. However, the reference does not suggest the use of such strains for vitamin C production.

Hoshino et al. teach the process of producing 2-keto-L-gulonic acid by fermentative conversion of L-sorbose with a high yield using bacteria and yeasts. The reference also teaches that KLG is an important intermediate for the production of L-ascorbic acid into which it can be converted and that such information is well known in the art. Therefore this reference specifically teaches the importance of KLG in ascorbic acid biosynthesis.


Combining the teachings of the above two references it would have been obvious to those skilled in the art to develop an assay for identification of yeasts capable of growing on ascorbic

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acid and culturing them on KLG as sole source of carbon and assaying such yeasts for accumulation of ascorbic acid specifically because of the teachings of Costamagna et al. which teaches that yeasts are capable of growing on ascorbic acid as sole carbon source. One of ordinary skill in the art would have been motivated to do so in order to use such yeasts to develop low cost alternative methods for making ascorbic acid in a large scale. One of ordinary skill in the art would have a reasonable expectation of success since Costamagna et al. teach the method of selecting yeasts capable of growing on ascorbic acid and Hoshino et al. teach that KLG is an important intermediate which finally is converted to ascorbic acid.

Therefore the claimed invention would have been *prima facie* obvious to one of ordinary skill in the art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Manjunath Rao whose telephone number is (703) 306-5681. The Examiner can normally be reached on M-F from 7:30 a.m. to 4:00 p.m. If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, P.Achutamurthy, can be reached on (703) 308-3804. The fax number for Official Papers to Technology Center 1600 is (703) 305-3014. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0196.

A handwritten signature in black ink, appearing to read "Manjunath N. Rao", is written over a circular official stamp. The stamp contains the text "MANJUNATH N. RAO" and "PATENT EXAMINER" in a circular arrangement.

Manjunath N. Rao Ph.D.
Patent Examiner, A.U. 1652
2/19/04